

## REMARKS

The Office Action mailed on August 13, 2003 subjected the originally filed claims 1 – 34 to a four-way requirement for restriction requiring the Applicants to make an election under 35 U.S.C. § 121 of one of the following inventions:

- Group I: Claims 1 – 10, 13 – 24, and 34, drawn to a method to estimate the effects of factors and interactions thereof in a gene expression microarray, and a system and computer readable medium comprising instructions for performing the method;
- Group II: Claim 11 drawn to a method to estimate at least one gene-variety interaction in a gene expression microarray;
- Group III: Claim 12 drawn to a method to estimate at least one gene-variety interaction in a gene expression microarray; and
- Group IV: Claims 25 – 33 drawn to a method to estimate the effects of factors and interactions thereof in a gene expression microarray, wherein the interactions are limited to include gene-non-gene interaction.

### Provisional Election

Applicants respectfully disagree with the characterization that the Group IV claims are drawn to a method wherein the interactions are limited to include gene-non-gene interaction. The only independent claim in Group IV, claim 25, claims a “method for estimating the effects of a plurality of factors and at least one of a plurality of interactions between the factors in a gene expression microarray . . .” Neither the “plurality of factors” or the “plurality of interactions” in claim 25 limits the interactions to include gene-non-gene interaction. The scope of claim 25 covers any interaction and is not limited to gene-non-gene interactions. Furthermore, originally filed dependent claim 32 specifically claims “a non-gene” interaction” that “includes an array-dye interaction.”

The Office Action asserts that inventions I and IV are unrelated because they are "directed to method reciting different method steps." Applicants respectfully submit that the recitation of "different method steps" is not sufficient to support the assertion that the inventions of Group I and IV have "different modes of operation, different functions, or different effects." As a minimum, Applicants respectfully request reconsideration of the Group I-IV restriction or a further clarification of the "different modes of operation, different functions, or different effects" encompassed by the Group I and Group IV claims. Alternatively, Applicants respectfully request withdrawal of the Group I-IV restriction requirement.

Applicants, as required under 35 U.S.C. § 121, provisionally elect Group I and respectfully traverse the requirement for restriction. It should be noted that as a practical matter examination of all the claims 1 – 34, covering Groups I through IV does not require separate or burdensome searches.

#### Provisional Election of Species

The Office Action also asserts that the application contains claims directed to patentably distinct species of the claimed invention wherein non-gene factors include: (a) a variety factor; (b) an array factor; and (c) a dye factor.

Applicants respectfully request that the species election requirement be withdrawn as being improper for the following reason. "Claims to be restricted to different species must be mutually exclusive." MPEP §806.04(f). None of the pending claims require an exclusive election of a non-gene factor. For example, pending claim 26 claims a method "wherein the non-gene factors includes a variety factor," but does not exclude the possibility of other non-gene factors such as an array factor or a dye factor. "Includes" is open-ended and "does not exclude additional, unrecited elements or method steps." MPEP §2111.03. Therefore, the non-gene factors are not mutually exclusive and a species election among the non-gene factors is improper.

Furthermore, originally filed dependent claim 23 is drawn to a method "wherein the interactions further include an array-dye interaction." One of ordinary skill in statistical analysis would know that an array-dye interaction is impossible to estimate if, for example, the array factor is included in the design but the dye interaction is excluded from the same design.

Dependent claim 27 has been amended to depend from claim 5 so that claims 27 – 33 are considered with Group I. Dependent claims 32 and 33 have been amended to maintain proper antecedent basis with parent claim 1. The plain language of amended claim 27 includes both a variety factor and an array factor. Similarly, claim 28 includes both a variety factor, an array factor, and a dye factor.

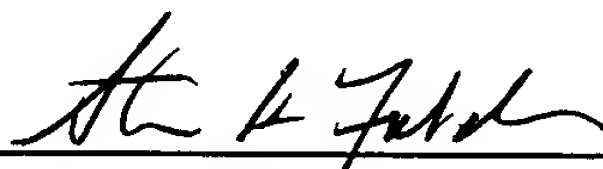
Applicants, as required under 35 U.S.C. § 121, provisionally elect species (c), the dye factor and respectfully traverse the species restriction for the reasons stated above.

Applicants have traversed the requirement for restriction and hereby request that either the requirement for restriction be withdrawn in view of the reasons recited herein or be made final. An early allowance of the application is earnestly requested. The Examiner is invited to contact Steven Fukuda at 212.790.6524 with any questions concerning the foregoing. No new matter has been added by way of any of the amendments presented herein.

No fee is believed to be due for this submission. Should any fees be required, however, please charge such fees to Pennie & Edmonds Deposit Account No. 16-1150.

Respectfully submitted,

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